

Jarrett Waters



Professional Competencies:

Mechanical Engineer who investigates:

- Vehicle and tractor-trailer accidents
- Vehicle systems and component failures
- Industrial/workplace accidents
- Agricultural vehicle and implement accidents
- Product defects and failures

Product Design Engineer with expertise in:

- Mobile vehicle product design and performance modeling
- Mechanical, electro-mechanical, pneumatic, and hydraulic design
- Finite Element Analysis (FEA) and Design for Manufacturing (DFM)
- Project management and product commercialization
- Design for service and reliability

Experience Summary

- Mechanical Engineer/Management of Off-Road and On-Road OEM
- Mechanical Engineer and integrator of GPS guided turf equipment
- Development Engineer of mobile agricultural equipment

Employment History:

Wolf Technical Services, Inc., Indianapolis, IN

Mechanical Engineer, Accident Reconstructionist (2018 to Present)

Performs accident reconstruction investigations, focusing on automobiles, agricultural vehicles, recreational vehicles, heavy vehicles and tractor trailers; vehicle systems failure analysis; automotive safety consultations; vehicle component and systems failure inspection and analysis; mechanical failure analysis including issues of maintenance; tire and wheel inspections; vehicle inspections and crush analysis. Images and interprets data from Event Data Recorders (EDRs) as well as GPS systems found in many passenger vehicles and large trucks.

Supports product design in the areas of project management, mechanical design, materials selection, machining prototype parts, simulation and analysis, testing support and validation. Principal Investigator/Lead Engineer for the Navy SBIR project *Body Armor Release & Ejection System*, where he demonstrated the feasibility of two newly designed release systems to quickly and repeatedly release hard plates in air and water. Also served as Principal Investigator for the Army Medical Research and Development Command SBIR project *Bougie-Integrated Endotracheal Intubation Stylet*,



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designing and prototyping a single use, steerable stylet equipped with LEDs and cameras to deliver and guide ETTs in difficult airway scenarios.

Ring-Co LLC, Trafalgar, Indiana

Mechanical Engineer; Co-Founder (2014-2018)

Co-Founded a start-up company which successfully licensed its design of an off-road/on-road terminal truck to a manufacturing OEM. Designed and produced multiple prototypes of a functional tracked utility chair for the mobility and veteran markets. Managed a cross functional team of engineers to develop mechanical, electrical, hydraulic, and software designs for multiple vehicle platforms. Created and utilized project tracking and management tools. Developed and validated vehicle and power-train performance models based upon market research for mechanical and hydrostratic platforms. Researched and developed market analysis to benchmark features of new product design. Designed components, weldments, and assemblies for multiple products. Developed and documented pneumatic, hydraulic, and electrical systems. Partnered with industry proven vendors to integrate their products into new designs while creating new-to-market features. Experienced with engine integrations and EPA emission compliance.

Smart Guided Systems, Columbus, Indiana

Mechanical Engineer (2015 to 2017)

Designed and implemented components to adapt GPS guidance controls to mechanical turf and agricultural equipment. Developed methods to autonomously control conventional zero-turn mowers. Integrated purchased electronic hardware into a ruggedized, outdoor, solution. Worked with hardware and software developers to optimize electronic packaging to exceed environmental needs and conditions. Created and implemented test protocols for guidance repeatability and accuracy based upon international standards. Aided in the development of work flows for Android applications while focusing on simplicity and user experience. Implemented parts inventory and bill of material tools and strategies. Assisted in the writing of technical manuals and parts books. Trained sales staff with regards to the product features, performance, and general industry. Utilized 3D scanning technology to adapt mechanical designs to multiple vehicle platforms. Evaluated and designed hydraulic systems to implement guidance equipment.

Equipment Technologies Inc., Mooresville, Indiana

Development Engineer (2010 to 2014)

Designed components and assemblies for line of mobile agricultural field sprayers. Responsible for the development of new features and their implantation for annual model year releases. Continuously worked with customers, vendors, and internal departments to ensure customer satisfaction and to protect the value of the product. Traveled North America to perform vehicle performance validation, troubleshooting of component failures, and implementing prototype solutions. Responsible for compiling and performing analysis of warranty data to establish vehicle



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usage and operator trends. Served as project manager for model year releases. Aided in the design and development of a modern cabin interior and electronic controls. Worked closely with industrial design teams and vendors to ensure proper execution of casted vision.

Experienced with thermoforming, injection molding, and roto-mold design and part implementation. Developed and implemented test procedure for structural and hydraulic analysis of boom wing assembly. Performed noise studies and analysis to improve operator comfort with the implementation of noise abatement techniques. Developed manufacturing processes and quality inspection procedures.

Education:

Rose-Hulman Institute of Technology, Terre Haute, Indiana 2010
B.S. Mechanical Engineering

Certifications & Current and Former Affiliations:

Bosch Certified Crash Data Retrieval (CDR) Technician
SAE Accident Reconstruction Certificate Program
Member, Society of Automotive Engineers (SAE)
Member of O.T.A.R.A (Ohio Traffic Accident Reconstruction Association)
EIT, Indiana License #ET31900104

Continuing Education:

Sit Down Forklift Operator Safety Training (Online) 360 Training	2023
MSHA New Miner Part 46 Safety Training	2023
SAE Advanced Applications of Heavy Vehicle EDR Data	2022
SAE Accessing and Interpreting Heavy Vehicle Event Data Recorders	2022
Aerial Photogrammetry Using Pix4D Mapper Software for Crash and Crime Scene Investigation, Forensic Mapping Solutions	2021
OSHA 30 Hour Training – General Industry	2020
HVE Forum, Engineering Dynamics Corporation	2020
SAE Tire and Wheel Safety Issues	2019
SAE Tire as a Vehicle Component	2019
SAE Vehicle Crash Reconstruction: Principles and Technology	2019
SAE Applying Automotive EDR Data to Traffic Crash Reconstruction	2019
Clearly Visible Optics, Lighting & Visibility for the Forensic Investigator	2019
SAE Accident Reconstruction, the Autonomous Vehicle & Advanced Driver Assistance Systems	2019
SAE Vehicle Dynamics for Passenger Cars and Light Trucks	2019
Crash Data Group EDR Summit (20 hours)	2019
Bosch CDR Technician Training (IPTM)	2018
Fundamental Techniques of Crash Investigation (IPTM)	2018
• Vehicle Lamp Examinations in Traffic Collisions	
• Safety Belt Examinations	
• Roadway Evidence	
• Tire Examinations – Tire and Wheel Forensics	
• Case Preparation and Courtroom Presentation	

Patents:

- CA3140111A1; Tube Introducer Intubation Device, *pending*
- WO2020247396A1; Emergency Incision and Dilation Apparatus and Method, *pending*
- US Patent No. 9,868,481; Methods and Devices for Vertically Positioning Fifth Wheel Hitch Assembly
- US Patent No. 9,834,051; Vehicles Configured for Removable Attachment of Implements
- US Design Patent No. D758,284 Vehicle Control Interface
- US Patent No. 9,045,039; Hydraulic Reservoir Assembly for a Crop Sprayer
- US Design Patent No. D725,581; Vehicle Console Portion
- US Design Patent No. D884560; Terminal Tractor
- US Design Patent No. D884561; Frame for a Terminal Tractor having a Front and Rear Attachment Device
- US Patent No. 8,777,126; Consolidated Ground Level Control Station for a Crop Sprayer
- US Patent No. 8,746,387; Exhaust System Outrigger for a Crop Sprayer
- US Patent No. 8,672,338; Cab Entry System for a Crop Sprayer
- US Patent No. 8,585,064; Pivoting Axle Suspension for a Crop Sprayer
- US Patent No. 8,505,976; Tank Support Assembly for a Crop Sprayer
- US Patent No. 8,490,730; Cooling System Assembly for a Crop Sprayer
- US Patent No. 8,444,213; Cab Mounting Assembly for a Crop Sprayer